

Amendments to the Claims:

1. (CURRENTLY AMENDED) An apparatus for detecting user speech for automatic speech recognition comprising:

a first microphone and at least a second microphone each operable to generate ~~sound~~ audio signals in response to sounds ~~with respective signal characteristics~~;

the first microphone operable to capture a greater proportion of speech sounds ~~of~~ from a user than the second microphone;

processing circuitry operable to process the audio signals and to compare the signal characteristics of the audio sound signals to a baseline; ~~generated by the first microphone and the second microphone to determine variations in those signal characteristics~~

speech recognition circuitry for further processing the audio signals and recognizing user speech in the audio signals;

the processing circuitry configured for selectively forwarding the audio signals from the first microphone to the speech recognition circuitry only when the audio signals vary from the baseline more than a threshold amount, thus indicating that for determining if the user is speaking.

2. (CANCELLED)

3. (CANCELLED)

4. (ORIGINAL) The apparatus of claim 1 wherein the first microphone is located relative to the second microphone to capture a greater proportion of speech sounds of a user.

5. (ORIGINAL) The apparatus of claim 1 further comprising a headset to be worn by a user and housing the first and second microphones.

6. (ORIGINAL) The apparatus of claim 5 wherein the first microphone is positioned in the headset to be closer to a mouth of the user than the second microphone when the headset is worn.

7. (CURRENTLY AMENDED) The apparatus of claim 1 wherein the processing circuitry processes signal characteristics ~~processed are sound~~ signal levels of the audio signals to compare to a baseline.

8. (CURRENTLY AMENDED) The apparatus of claim 1 wherein the processing circuitry processes signal characteristics of the audio signals that include at least one of energy level characteristics, frequency characteristics, amplitude characteristics and phase characteristics.

9. (CURRENTLY AMENDED) The apparatus of claim 8, wherein ~~the 1 further comprising~~ processing circuitry is operable for initially determining a variation between signal characteristics of the audio ~~first and second sound~~ signals when the user is not speaking and then using that variation as a baseline.

10. (CANCELLED)

11. (ORIGINAL) The apparatus of claim 1 wherein the second microphone is an omnidirectional microphone.

12. (CURRENTLY AMENDED) The apparatus of claim 1 further comprising mel scale filters, the processing circuitry operable to use outputs of the mel scale filters for comparing the audio signals to a baseline ~~for determining variations in the signal characteristics.~~

13. (CANCELLED)

14. (CURRENTLY AMENDED) A terminal system for detecting user speech for automatic speech recognition comprising:

a headset including first and second microphones operable to generate audio sound-signals in response to sounds ~~with respective signal characteristics~~, the first microphone operable to capture a greater proportion of speech sounds from ~~of~~ a user wearing the headset than the second microphone;

a terminal including processing circuitry operable to process the audio signals and compare the signal characteristics of the audio first microphone signals to a baseline; ~~and the signal characteristics of the second microphone to determine variations in those signal characteristics for determining if the user is speaking.~~

speech recognition circuitry for further processing audio signals and recognizing user speech in the audio signals;

the process circuitry configured for selectively forwarding the audio signals from the first microphone to the speech recognition circuitry only when the audio signals vary from the baseline more than a threshold amount, thus indicating that the user is speaking.

15. (CANCELLED)

16. (CANCELLED)

17. (ORIGINAL) The terminal system of claim 14 wherein the first microphone is positioned in the headset to be closer to a mouth of the user than the second microphone when the headset is worn.

18. (CURRENTLY AMENDED) The terminal system of claim 14 wherein the processing circuitry processes signal characteristics processed are sound signal levels of the audio signals to compare to a baseline.

19. (CURRENTLY AMENDED) The terminal system of claim 14 wherein the processing circuitry processes signal characteristics of the audio signals that include at least one of energy level characteristics, frequency characteristics, amplitude characteristics and phase characteristics.

20. (CURRENTLY AMENDED) The terminal system of claim 19, wherein the 14 ~~further comprising~~ processing circuitry is operable for initially determining a variation between signal characteristics of the audio ~~first and second sound~~ signals when the user is not speaking and then using that variation as a baseline for ~~subsequent processing of other variations in the~~ signal characteristics for ~~both the first and second microphones~~.

21. (CURRENTLY AMENDED) The terminal system of claim 14 wherein the speech recognition circuitry is located in the terminal ~~processing circuitry is operable for determining if the signal characteristics variation exceeds the baseline variation by a predetermined amount to determine if the user is speaking.~~

22. (CURRENTLY AMENDED) A headset for use with a terminal having speech recognition circuitry for processing inputs from the headsets and recognizing user speech capabilities, the headset comprising:

a first microphone and a second microphone each operable to generate audio sound signals in response to sounds~~with respective signal characteristics~~, the first microphone operable to capture a greater proportion of speech sounds from ~~of~~ a user than the second microphone; and

processing circuitry operable to process the audio signals and to compare signal characteristics of the sound audio signals to a baseline; ~~generated by the first microphone and the second microphone to determine variations in those sound signal characteristics for determining if the user is speaking.~~

the processing circuitry configured for selectively forwarding the audio signals from the first microphone to the speech recognition circuitry of the terminal only when the audio signals vary from the baseline more than a threshold amount, thus indicating that a user is speaking.

23. (CANCELLED)

24. (ORIGINAL) The headset of claim 22 wherein the first microphone is located relative to the second microphone to capture a greater proportion of speech sounds of a user.

25. (CURRENTLY AMENDED) The headset of claim 22 wherein the processing circuitry processes signal characteristics processed are sound signal levels of the audio signals to compare to a baseline.

26. (CURRENTLY AMENDED) The headset of claim 22 wherein the processing circuitry processes signal characteristics of the audio signals that include at least one of energy level characteristics, frequency characteristics, amplitude characteristics and phase characteristics.

27. (CURRENTLY AMENDED) The headset of claim 26, wherein the ~~22 further comprising~~ processing circuitry is operable for initially determining a variation between signal characteristics of the audio ~~first and second sound~~ signals when the user is not speaking and then using that variation as a baseline ~~for subsequent comparison of other variations in the signal characteristics for both the first and second microphones.~~

28. (CANCELLED)

29. (CURRENTLY AMENDED) The headset of claim 22 further comprising mel scale filters, the processing circuitry operable to use outputs of the mel scale filters for comparing the audio signals to a baselinedetermining variations in the signal characteristics.

30. (CANCELLED)

31. (CURRENTLY AMENDED) An apparatus in a voice-driven system that includes speech recognition circuitry for processing audio signals and recognizing ~~for detecting~~ user speech, comprising:

a plurality of microphones separated on the body of a user and ~~generating~~ developing a plurality of audio signals in response to sounds with ~~signal characteristics~~, at least a first audio signal of said plurality of signals including a greater proportion of user speech than a second audio signal of said plurality of audio signals which is characterized predominantly by ambient sounds; and

processing circuitry configured to process said plurality of audio signals to compare characteristics of the audio signals to a baseline; ~~for determining variations in their signal characteristics to develop an output signal that reveals the presence or absence of user speech.~~

the processing circuitry configured for selectively forwarding the audio signals from the first microphone to the speech recognition circuitry only when the audio signals vary from the baseline more than a threshold amount, thus indicating that the user is speaking.

32. (CURRENTLY AMENDED) The apparatus of claim 31 wherein said processing circuitry generates ~~a signal characteristic the~~ the baseline from ~~which said output signal is developed.~~

33. (ORIGINAL) The apparatus of claim 32 wherein said baseline is stored in a memory.

34. (CURRENTLY AMENDED) The apparatus of claim 32 wherein said baseline represents a difference in signal level of the audio signals over a predetermined time base between said first and second audio signals.

35. (CANCELLED)

36. (CURRENTLY AMENDED) The apparatus of claim 31 comprising a first microphone positioned near the mouth of a user and configured to develop a first audio signal characterizing predominantly user speech, and a second microphone positioned away from the mouth of the user and configured to develop a second audio signal characterizing predominantly sounds other than user speech.

37. (CURRENTLY AMENDED) The apparatus of claim 31 wherein the processing circuitry processes said signal characteristics comprises signal levels of the audio signals to compare to a baseline.

38. (CANCELLED)

39. (CANCELLED)

40. (CURRENTLY AMENDED) The apparatus of claim 31 ~~39~~ wherein said speech processing circuitry is located in a central computer.

41. (CURRENTLY AMENDED) The apparatus of claim 31 ~~39~~ wherein said speech processing circuitry is located in a body worn terminal.

42. (CURRENTLY AMENDED) The apparatus of claim 31 ~~39~~ wherein said speech processing circuitry is located in a headset.

43. (ORIGINAL) The apparatus of claim 36 wherein said first microphone is directional and said second microphone is omnidirectional.

44. (CURRENTLY AMENDED) A method for detecting user speech in a voice-driven environment, the method comprising:

detecting sound with first and second microphones to generate audio ~~sound~~-signals for the respective microphones;

locating the first microphone to detect a greater proportion of speech sounds from ~~of~~-a user than the second microphone;

processing the audio ~~signal~~ characteristics of the sound signals generated by the first microphone and the second microphone and comparing ~~characteristics of the audio signals to a baseline; based on the variations in those sound signal levels, determining if the user is speaking.~~

further selectively processing audio signals from the first microphone with speech recognition circuitry that recognizes user speech in the audio signals;

only forwarding audio signals for further processing with the speech recognition circuitry when the audio signals vary from the baseline more than a threshold amount.

45. (CANCELLED)

46. (CANCELLED)

47. (ORIGINAL) The method of claim 44 further comprising positioning the microphones in a headset to be worn by a user.

48. (CURRENTLY AMENDED) The method of claim 44 wherein the processing step processes signal characteristics of the audio signals that include at least one of energy level characteristics, frequency characteristics, amplitude characteristics and phase characteristics.

49. (CURRENTLY AMENDED) The method of claim 48 ~~[[44]]~~ further comprising:

when the user is not speaking, determining a variation in the signal characteristics for both the audio ~~sound~~-signals of the first and second microphones and using that variation as a baseline for comparison

50. (ORIGINAL) The method of claim 49 further comprising subsequently comparing the variation in the signal characteristics for both the first and second microphones to the baseline variation for determining if the user is speaking.

51. (ORIGINAL) The method of claim 50 further comprising determining if the signal characteristics variation exceeds the baseline variation by a predetermined amount to determine if the user is speaking.

52. (CURRENTLY AMENDED) A method useful in a voice-driven system for detecting user speech, comprising:

developing a plurality of audio ~~sound~~-signals ~~with signal characteristics~~ from sounds at spaced locations on the body of a user, at least a first audio signal of said plurality of signals including a greater proportion of user speech than a second audio signal of said plurality of signals which is characterized predominantly by ambient sounds other than user speech; and

processing said plurality of audio signals to compare characteristics of the audio signals to a baseline; ~~for determining variations in their signal characteristics to develop an output signal that reveals the presence or absence of user speech.~~

further selectively processing the first audio signal with speech recognition circuitry that recognizes user speech in the audio signal;

only forwarding the first audio signal for further processing with the speech recognition circuitry when the audio signals vary from the baseline more than a threshold amount.

53. (CURRENTLY AMENDED) The method of claim 52 wherein said processing generates ~~the~~ a signal characteristic baseline ~~from which said output signal is developed.~~

54. (ORIGINAL) The method of claim 53 wherein said baseline is stored in a memory.

55. (CURRENTLY AMENDED) The method of claim 53 wherein said baseline represents a difference in signal level of the audio signals over a predetermined time base between said first and second audio signals.

56. (CANCELLED)

57. (CURRENTLY AMENDED) The method of claim 52 comprising positioning a first microphone near the mouth of a user to develop said first audio signal characterizing predominantly user speech, and positioning a second microphone away from the mouth of the user to develop said second audio signal characterizing predominantly sounds other than user speech.

58. (CANCELLED)

59. (CANCELLED)

60. (CANCELLED)